



THE REPUBLIC OF UGANDA

**KALUMIRO DISTRICT EDUCATION DEPARTMENT
CONTINUOUS ASSESSMENT MOCK 2024
MATHEMATICS EXAMINATION**

TIME ALLOWED: 1 HOUR AND 30 MINUTES

1	2	3	4	5	6	7	8	9	10
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T. R MUGIBA JUNIOR

Candidate's Name: _____

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District Name: Tel 0756 1012 74 (4447)

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Read the following instructions carefully.

1. This paper is made up of two sections A and B.

2. Section A has 20 questions and B has 12 questions.

3. All working for both sections must be shown in the

space provided. Answer all questions. All answers to

questions A and B must be written in the spaces

provided.

4. Working must be done using a blue or black ball

point pen or ink. Any work written in pencil other than

notes, pictures and diagrams will NOT be marked.

5. Unnecessary changes of work may lead to loss of

marks.

6. Any handwriting that cannot easily be read may lead

loss of marks.

7. No calculators are allowed in the examination room.

8. Do not fill any thing in the boxes indicated. "For examiners use only" and those inside the question paper.

FOR EXAMINERS USE ONLY		
QN. NO	MARKS	EXMS NO
1-5		
6-10		
11-15		
16-20		
21-22		
23-24		
25-26		
27-28		
29-30		
31-32		
TOTAL		10

Section A (40 Marks)

1. Subtract 12 from 37

$$\begin{array}{r} 37 \\ - 12 \\ \hline 25 \end{array}$$

Side work
7-2=5
3-1=2

2. Write XCV in Hindu Arabic Numerals

XC	V
90	5

$$\begin{array}{r} 90 \\ + 5 \\ \hline 95 \end{array}$$

~~XCV = 95~~

3. Given that, $T = \{e, d, h, v\}$ and $S = \{e, d, o, t\}$.

Find the $n(T - S)$

$$T = \{e, d, h, v\} \quad | \quad (T-S) = \{h, v\}$$

$$S = \{e, d, o, t\} \quad | \quad n(T-S) = 2$$

method b

$n(T-S) = 2$

4. Work out: $5 - {}^+2$

$$5 - ({}^+2)$$

method b

$$\begin{array}{ccccccc} & & & & & & \\ & & & & & & \\ 5 & - & 2 & & & & \\ & & & & & & \\ 3 & & & & & & \end{array}$$

+2

5. Find the next two numbers in the sequence:

$$64, 49, 36, 25, 16, 9$$

$4^2 = 4 \times 4$
 $4^2 = 16$
 $3^2 = 3 \times 3$
 $3^2 = 9$

6. Work out : $\frac{1}{4} \div \frac{1}{2}$

$$\frac{1}{4} \div \frac{1}{2}$$

Method b

$$\frac{1}{4} \times \frac{2}{1}$$

7. Add:

$$\begin{array}{r} 230_{\text{five}} \\ + 143_{\text{five}} \\ \hline 423_{\text{five}} \end{array}$$

Side work
 $0+3=3$
 $3+4=7$

Method b

$$\frac{1}{4} \times \frac{2}{1}$$



8. The average age of two boys is 8 years. One of them is 6 years old.

How old is the second boy?

<u>Age of second boy</u>	<u>10 years</u>
(Average \times number) - 6 years	<u>The second boy is 10 years old</u>
$(8 \times 2) - 6$ years	10
$16 - 6$ years	10

<u>method b</u>	<u>Age of two boys</u>	<u>Age of second boy</u>
	<u>Average \times number</u>	<u>Second boy</u>
	8×2 years	$16 - 6$
	16 years	10 years

9. James withdrew a bundle of fifty thousand shilling notes numbered from GH 2854600 to GH 2854799 consecutively.

How much money did James withdraw?

Last note - first note + 1	<u>200 notes</u>
$GH\ 28\ 54\ 799$	$199 + 1$
$- GH\ 28\ 54\ 600$	<u>1</u>
$00\ 00$	<u>199 + 1</u>

Amount of money James got

$$Sh.\ 50,000 \times 200 \\ Sh.\ 10,000,000$$

10. Work out:

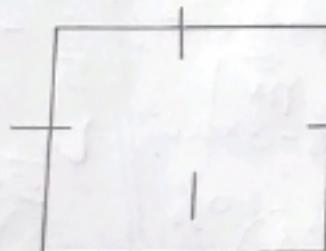
Hrs	Min
$\frac{5}{4}$	$10 + 60$
-2	15
2	55

Side work

<u>60</u>
<u>+ 10</u>
<u>670</u>
<u>✓ 55</u>

$$4 - 2 \\ 2$$

11. Find the length of the figure below whose area is 49cm^2



$$\text{Length} = \sqrt{49\text{cm}^2}$$

$$\text{Length} = \sqrt{7 \times 7}$$

$$\text{Length} = \sqrt{49\text{cm}^2}$$

OR
 $\text{Length} = \sqrt{49\text{cm}^2}$

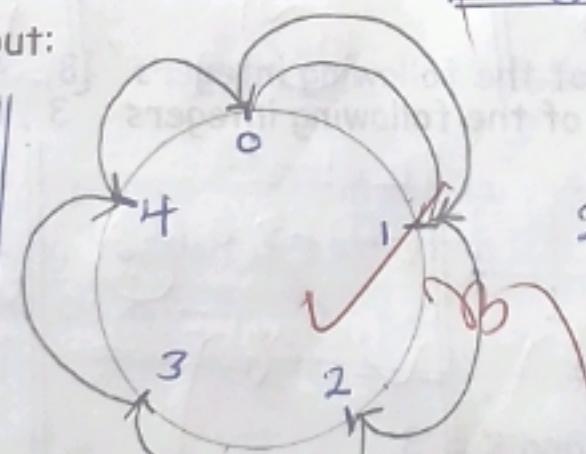
$$\text{Length} = \sqrt{7\text{cm} \times 7\text{cm}}$$

$$\text{Length} = 7\text{cm}$$

OR
 $S \times S = 49$
 $1 \times 1 = 1$
 $S = 7$
 $S \times S = 7 \times 7$
 $S = 7\text{cm}$

12. Using a dial, Work out:

$$2 + 4 = \underline{\quad} \text{ (finite 5)}$$



$$2 + 4 = \underline{1} \text{ (finite 5)}$$

13. Solve: $\frac{2y}{3} = 24$

$$3 \times \frac{24}{3} = 24 \times 3$$

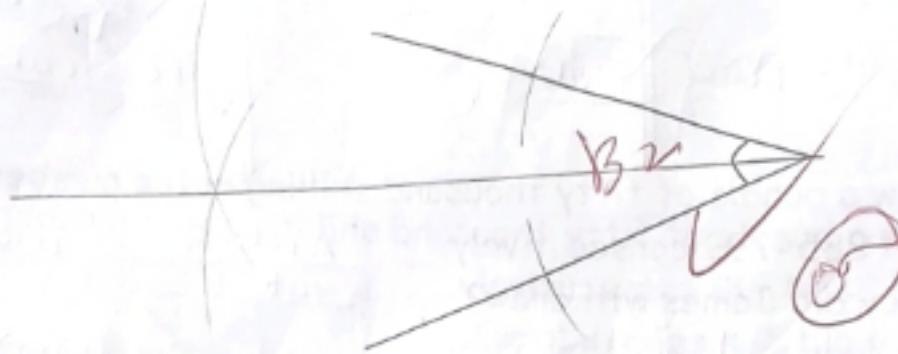
$$\frac{2y}{3} = 24 \\ 2y = 72 \\ 2y = 36 \\ y = 36$$

method b

$$\frac{2y}{3} = 24 \\ (2y \times 1) = (3 \times 24)$$

$$2y = 72 \\ 2y = 72 \\ 2y = 72 \\ 2y = 72 \\ y = 36$$

14. Using a pair of compasses, ruler and pencil only. Bisect the given angle below.



15. Express 21510 in scientific form.

$$21510 \div 10 = 2151$$

$$2151 \div 10 = 215.1$$

$$215.1 \div 10 = 21.51$$

$$21.51 \div 10 = 2.151$$

$$2151 \times 10^4$$

16. If $\frac{3}{5}$ of the P.6 pupils are day scholars. What is the percentage of boarders?

$$\frac{5}{5} - \frac{3}{5} \times 100\% = \frac{2}{5} \times 100\%$$

$$20 \times 2\% = 40\%$$

40% are boarders

<u>method b</u>	<u>method c</u>
$100\% - \frac{3}{5} \times 100\% = \frac{2}{5} \times 100\%$	$\frac{5}{5} - \frac{3}{5} = \frac{2}{5}$
$100\% - 3 \times 20\% = 2 \times 20\%$	$\frac{2}{5} \times 100\% = 40\%$
$100\% - 60\% = 40\%$	
$40\% \text{ are boarders}$	

17. Find the median of the following integers

$$-4, -3, 0, 2, 4$$

Median = 0

method b
 $(-4), (-3), 0, (2), 4$
Median = 0

method c
 $(-4), (2), 0, (-3), 4$
Median = 0

method d
 $4, 2, 0, -3, -4$
Median = 0

18. Given that $d = k^2$ and $k = -3$

Find the value of $d^2 - k$

Value of d || $d = +9$

$d = k \times k$

$d = -3 \times -3$

Value of $d^2 - k$

$d \times d - k$

$$9 \times 9 - (-3)$$

$$81 - (-3)$$

$$81 + 3$$

84 ✓

method b

Value of $d^2 - k$

$$(d \times d)^2 - (k)$$

$$(-3 \times -3)^2 - (-3)$$

$$(9)^2 + 3$$

$$9 \times 9 + 3$$

$$81 + 3$$

$$84$$

19. Round off 5.32 to the nearest tenth

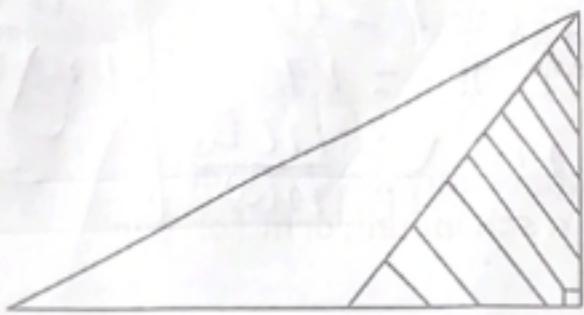
$$\begin{array}{r} 5.32 \\ \underline{+ 0.09} \\ 5.3 \end{array}$$

method b

$$5.32 \text{ RPY}$$

~~$$\begin{array}{r} 5.32 \\ \underline{- 5.3} \\ 0.00 \end{array}$$~~

20. The area of the un shaded triangle is 20m^2 . If the height of the triangle is 5m, find the length of the base of the un shaded triangle



$$\text{Area} = \frac{b \times h}{2}$$

$$\text{Area} = \frac{b \times 5}{2}$$

$$20 = \frac{b \times 5}{2}$$

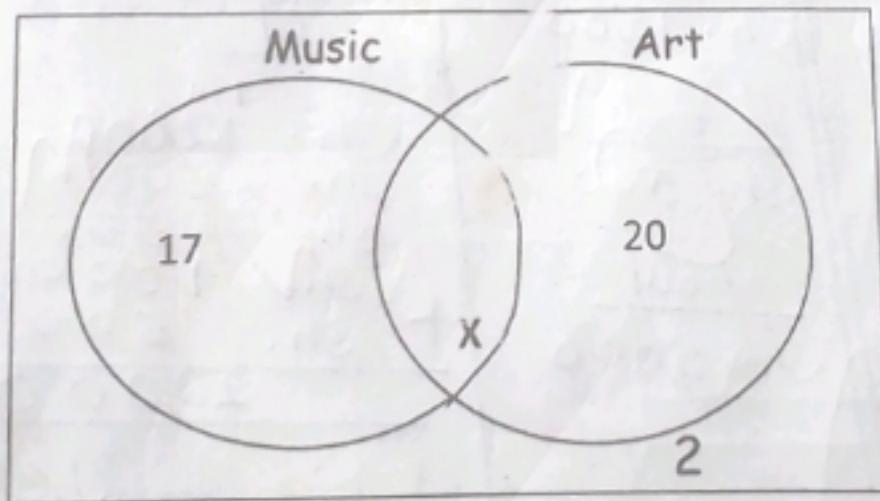
$$20 \times 2 = \frac{b \times 5 \times 2}{2}$$

$$\begin{aligned} 40 &= b \times 5 \\ 40 &\div 5 = b \\ 8 &= b \end{aligned}$$

$$\text{base} = 8 \text{m}$$

SECTION B (60 Marks)

21. The venn diagram below shows the number of pupils who like music and art. Study it carefully and work out the questions that follow.



a) If those who like music are equal to those who like art only.

Find the value of X.

(2 mks)

Value of X

$$17 + x = 20$$

$$17 - 17 + x = 20 - 17$$

$$x = 3$$

$$x = 3$$

The value of X is 3

b) How many pupils are in the class all together?

(2 mks)

Number of pupils in a class

$$20+x+17+2 \text{ pupils}$$

$$20+3+17+2 \text{ pupils}$$

c) Find the probability of choosing a pupil at random who like music only.

$$n(P.C) = 17$$

$$n(T.C) = 42$$

$$\text{prob} = \frac{n(P.C)}{n(T.C)}$$

42 pupils

42 pupils

in the class.

$$\text{prob} = \frac{17}{42}$$

method b
 $n(S.S) = 42$

$$n(E) = 17$$

$$\text{prob} = \frac{n(E)}{n(S.S)}$$

(1 mk)

$$\text{prob} = \frac{17}{42}$$

23 work out:

$$(a) \frac{1.8 \times 1.2}{0.9 \times 0.04}$$

$$\left(\frac{18}{10} \times \frac{12}{10} \right) \div \left(\frac{9}{10} \times \frac{4}{100} \right)$$

$$\left(\frac{18}{10} \times \frac{12}{10} \right) \div \left(\frac{36}{1000} \right)$$

$$(b) 1\frac{1}{2} - \frac{1}{4} + \frac{2}{3}$$

$$\frac{1 \times 2 + 1}{2} + \frac{2}{3} - \frac{1}{4}$$

$$\frac{3}{2} + \frac{2}{3} - \frac{1}{4}$$

$$\frac{\frac{18}{10} \times \frac{12}{10}}{\frac{36}{1000}} \times \frac{1000}{36}$$

(3 mks)

$$\frac{18 \times 12}{10 \times 10} \times \frac{1000}{36}$$

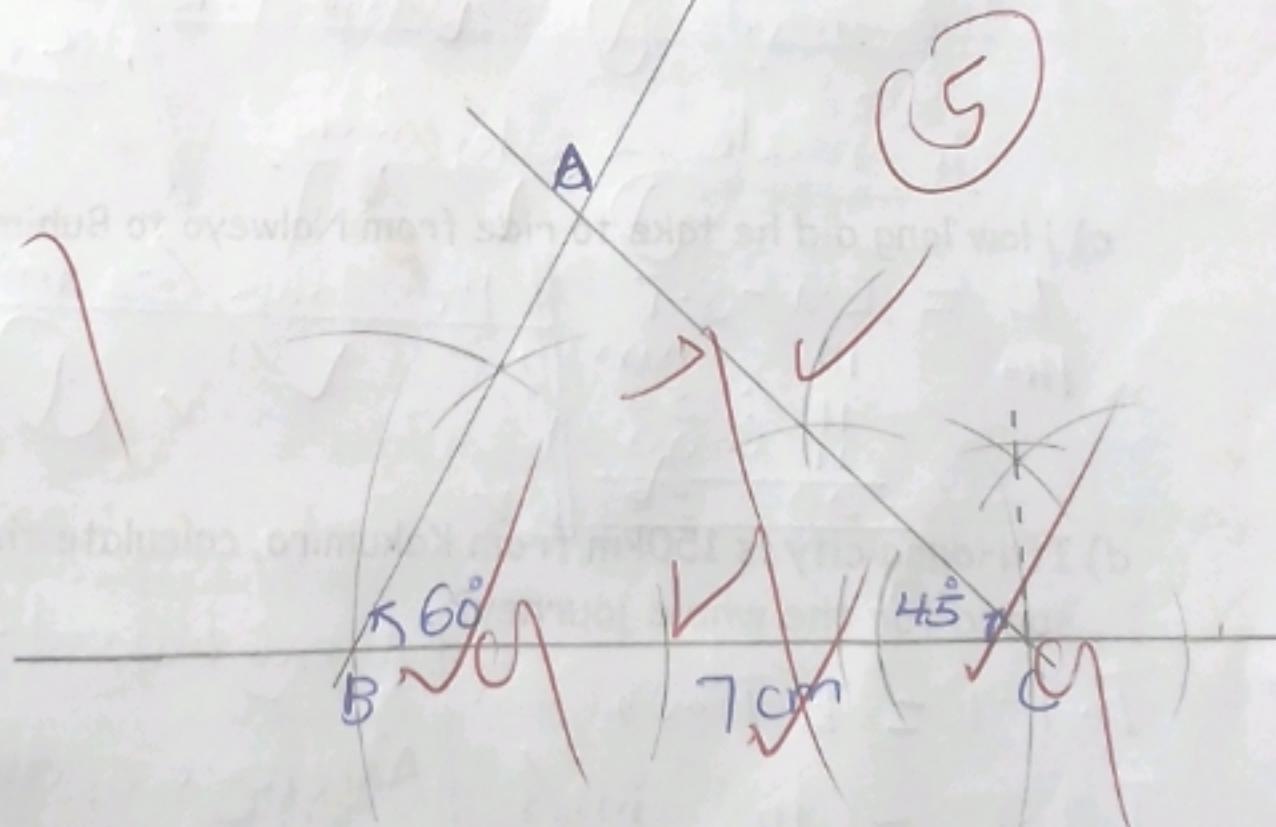
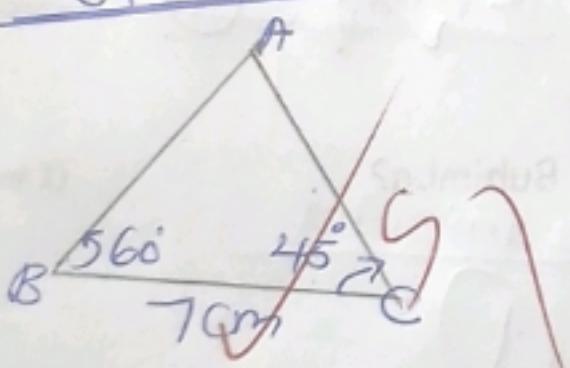
(3 mark)

24a) Using a ruler, pencil and pair of compasses only, construct a triangle ABC in the space below where angle ABC = 60°, Line BC = 7cm and angle BCA = 45°

Accurate construction

(5 mks)

Sketch



(b) Measure line AB

5 cm

①

4.9 cm, 5.1 cm

(1 mark)



25) The time table below shows departure and arrival of a motorcyclist riding from Kakumiro to Hoima city.

TOWN	ARRIVAL	DEPARTURE
Kakumiro		7:30am
Nalweyo	10:10am	11:00am
Buhimba	11:50am	12:00pm
Hoima city	12:30pm	

a) At what time did the motorcyclist start the journey? (1 mark)

At 7:30 am OR

OR ✓

The motorist

✓

The motorcyclist started the
journey at 7:30 am

b) How many stopovers did he make before reaching Hoima city? (1 mark)

He made 2 stopovers OR

OR

He made 2 stopovers

OR

He made 2 stopages

c) How long did he take to ride from Nalweyo to Buhimba? (1 mark)

$$P = E.T - S.T$$

#

hrs	min
11 : 50	
11 : 00	
00 : 50	✓

He took 50 minutes

d) If Hoima city is 150km from Kakumiro, calculate the motorist's average speed for the whole journey? (2 marks)

$$T \cdot T \cdot T = E.T - S.T$$

$$T \cdot T \cdot T = \text{hrs min}$$

12 : 30

07 : 30

05 : 00

$$\text{Average speed} = \frac{T \cdot P \cdot C}{T \cdot T \cdot T}$$

$$\text{Average speed} = \frac{150}{5} \text{ km/h}$$

$$\text{Average speed} = 30 \text{ km/h.}$$

$$T \cdot T \cdot T = 5 \text{ hours}$$

26. Daniel is 4 times as old as his young brother Peter. The difference between their age is 30 years.

a) How old is Peter?

Let Peter's age be k

$$k + \text{Peter} = 4k \quad | -k$$

$$3k = 30 \quad | :3$$

$$\text{Peter} = 10 \text{ years}$$

$k = 10 \text{ years}$

b) Solve the inequality

$$2y + 2 \leq 8 \quad | -2$$

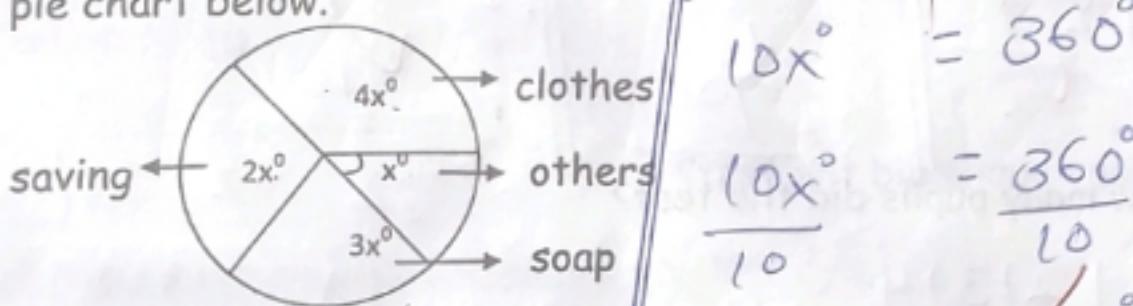
$$2y \leq 6 \quad | :2$$

$$y \leq 3$$

$y \leq 3$

(2 mks)

27. Bikara was given shs 72,000 fdr her shopping. She spent it as shown on the pie chart below.



a) Find the value of X

$$2x^\circ + 4x^\circ + x^\circ + 3x^\circ = 360^\circ$$

c) b). How much did she spend on soap?

$$\frac{3x}{36} \times 7200 = \frac{7200}{12} = 600$$

$$3 \times 600 = \text{sh } 1800$$

$$\frac{3x}{36} \times 7200 = \text{sh } 21600$$

(2 mks)

28 A tailor used $\frac{3}{8}$ of a roll of cloth in making shirts and $\frac{2}{5}$ of the remainder in making trousers. He was then left with 9 metres. How long was the roll of the cloth at first?

Left fraction (5 mks)

$$\frac{8}{8} - \frac{5}{8} = \frac{3}{8}$$

$$9 \div \frac{3}{8} = 24 \text{ metres}$$

$$\frac{3}{8} \times 8 = 3 \text{ metres}$$

$x \left(\frac{8}{8} - \frac{3}{8} \right)$

$\frac{1}{4}$

Trousers and Shirts

$\frac{3}{8} + \frac{1}{4}$

$\frac{5}{8}$

$\frac{3}{8}$

$9 \div \frac{3}{8}$

24 metres

(24 metres)

29. Use the table to answer the questions that follow?

Marks scored	Frequency	Total mark
54	3	162
64	2	128
70	3	210
85	4	340

a) Complete the table above

(3 marks)

$$\begin{array}{r}
 6 \ 4 \\
 \times 2 \\
 \hline
 12 \ 8
 \end{array}
 \quad \quad
 \begin{array}{r}
 210 \\
 \times 3 \\
 \hline
 630
 \end{array}$$

$$\begin{array}{r}
 340 \\
 \times 4 \\
 \hline
 1360
 \end{array}$$

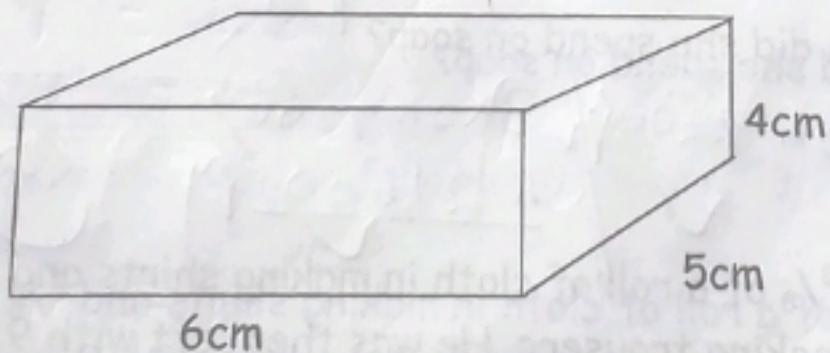
b) How many pupils did the test?

(1 mark)

$$3 + 2 + 3 + 4 = 12$$

12 pupils did the test.

30 Study the figure below and use it to answer the questions that follow.



a) Find the number of:-

i. Edges

12 edges

(1 mark)

ii. Faces

6 faces

(1 mark)

b). Calculate the volume of the figure above.

$$\text{Volume} = \text{base area} \times \text{height}$$

$$\text{Volume} = (6 \times 5) \times 4 \text{ cm}^3$$

$$\text{Volume} = 30 \times 4 \text{ cm}^3$$

$$\text{Volume} = 120 \text{ cm}^3$$

(2 marks)

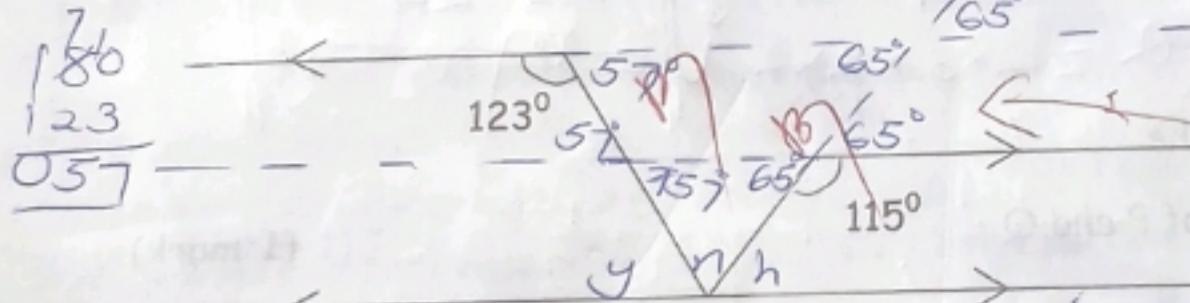
$$\begin{aligned} V &= \text{area of rectangle} \times h \\ &= (L \times W) \times h \\ &= (6 \times 5) \times 4 \text{ cm}^3 \\ &= 30 \times 4 \text{ cm}^3 \\ &= 120 \text{ cm}^3 \end{aligned}$$

(2 marks)

c) Find its total surface area.

$$\begin{aligned} T.S.A &= 2(LW) + 2(Lh) + 2(Wh) \\ T.S.A &= 2(6 \times 5) + 2(6 \times 4) + 2(5 \times 4) \text{ cm}^2 \\ T.S.A &= 2(30) + 2(24) + 2(20) \text{ cm}^2 \\ T.S.A &= 2 \times 30 + 2 \times 24 + 2 \times 20 \text{ cm}^2 \\ T.S.A &= 60 + 48 + 40 \text{ cm}^2 \\ T.S.A &= 148 \text{ cm}^2 \end{aligned}$$

31. Study the figure below carefully and find the value of n.



$$\begin{array}{r} 71 \\ 80 \\ 15 \\ \hline 065 \end{array}$$

Value of y

$$y = 180^\circ - 123^\circ$$

$$y = 57^\circ$$

Value of h

$$h = 180^\circ - 115^\circ$$

$$h = 65$$

Value of n

$$n = 180^\circ - (57 + 65)^\circ$$

$$n = 180^\circ - 122^\circ$$

$$n = 58^\circ$$

method b

Value of y

$$y = 180^\circ - 123^\circ$$

$$y = 57^\circ$$

Value of n

$$y+n = 115^\circ \text{ (ALERTS)}$$

$$57^\circ + n = 115^\circ$$

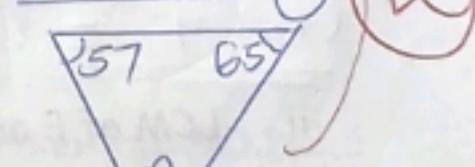
$$57^\circ - 57^\circ + n = 115^\circ - 57^\circ$$

$$0 + n = 58^\circ$$

$$n = 58^\circ$$

method c

Considering



Value of n

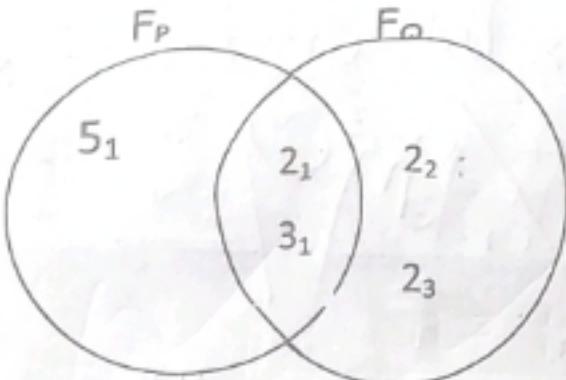
$$n = 180^\circ - (57 + 65)^\circ$$

$$n = 180^\circ - (57 + 65)^\circ$$

$$n = 180^\circ - 122^\circ$$

$$n = 58^\circ$$

32. The diagram below shows prime factors of two numbers. Study it carefully and answer the questions that follow



a) Find the value of:

i. P

$$P = 5 \times 2 \times 3$$

(1 mark)

ii. Q

$$Q = 2_1 \times 3_1 \times 2_2 \times 2_3$$

$$Q = 2 \times 3 \times 2 \times 2$$

(1 mark)

b) calculate the:

i. GCF of P and Q

(1 mark)

$$\text{G.C.F} = F_p \cap F_q$$

$$\text{G.C.F} = 2 \times 3$$

$$\text{G.C.F} = 6$$

ii. LCM of P and Q

(2 marks)

$$\text{L.C.M} = F_p \cup F_q$$

$$\text{L.C.M} = 5_1 \times 2_1 \times 3_1 \times 2_2 \times 2_3$$

$$\text{L.C.M} = 5 \times 2 \times 3 \times 2 \times 2$$

$$\text{L.C.M} = 120$$

END